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09/622,470	08/17/2000	Anthony Tung Shuen Ho	A33361 PCTUS	5005

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EXAMINER
TRAN, ELLEN C

ART UNIT	PAPER NUMBER
2134	

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>25 June 2004</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-45* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All b)☐ Some * c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
     Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   This action is responsive to communication: amendment filed on 25 June 2004, the

original application was filed on 17 August 2000 with a continuing application date 371 PCT of

18 October 1998.

2.   Claims 1-45, are pending, claims 16-18, 20-24, and 26-31 have been amended to correct

spelling errors. Claims 1, 16, 17, and 22 are independent claims.

Response to Arguments

3.   Applicant's arguments filed 25 June 2004 have been fully considered but they are not

persuasive.

        In response to applicants argument on page 13 "The Examiner has singled-out a limited

number of passages or partial passages in the '004 reference on which the outstanding rejection

of claim 1 is allegedly predicated". The Office disagrees reference '004 anticipates the invention

claimed the brevity that was used in reciting the passages of '004 should not prevent or limit the

applicant from reviewing the whole reference to gain a through understanding of the reference

and how it teaches the claimed invention.

        In response to "Specifically, the Examiner points to Col. 4, lines 48-51 of the '004". The

Office acknowledges Col. 3, should be replaced with "Col. 4" which is an obvious teaching of

the invention "A method of steganographic encoding including the steps of:" compared to '004

The invention disclosed herein combines two techniques, steganography-obscuring information

that is otherwise in plain sight, and cryptography-scrambling information". If the applicant had

reviewed the reference this clear mapping of terminology would be obvious (steganographic =

steganography / encoding = cryptography-scrambling).

In response to applicant's argument starting on the top of page 14, "Further, the Examiner's citation of Col. 8, lines 20-25 and Col. 8, lines 26-28 is equally opaque". The Office disagrees the reference clearly shows the limitations of the inventions. Specifically "(A) providing primary data containing a plurality of addressable first data elements; (B) providing secondary data containing a plurality of second data elements; and (C) for each second data element" is clearly shown in reference '004 Col. 8, lines 19-32. "Prior to encoding, some additional information to be encoded into the signal is prepared and made available to the encoder, in a bit addressable manner ... the encoder tracks the sequential number of each window". "Primary data" is the same as the "additional information". Likewise the "secondary data" is the sequential tracking that the encoder performs.

In response to applicant's argument on page 14, "Applicants contend that its "searching" step in claim is not a "convolution operation"". The Office disagrees the reference clearly describes a searching operation. Although the term "searching" is not used the act of going in sequential order from a starting point to an ending point and using "the convolution mask to determine which bit to use" is the same as a search operation" see col. 8, lines 19-67.

In response to applicant's argument on page 14 "The Examiner asserts that step "(C2)" of claim 1 is anticipated by '004 reference at Col. 1, lines 15-27. Once again, Applicants would appreciate a clarification of how this passage anticipates what is claimed in step "(C2)". It appears that the applicant misinterpreted the Office Action, which cites "Col. 8" not "Col. 1". The applicant claims "(C2) generating a key element including the address of the matching first data element when a match is found for the content of the second data element" which is shown

in '004 col. 8, lines 10-27 "These keys will be saved along with the information matching them

to the sample stream in question".

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5.   **Claims 1-4, 6-18, 25-27, 32-45** are rejected under 35 U.S.C. 102(a) as being anticipated

by Cooperman et al. U.S. Patent No. 5,613,004 issued 18 March 1997 (hereinafter '004).

As to independent claim 1, "A method of steganographic encoding including the

steps of:" is taught in '004 col. 3, lines 48-51;

"(A) providing primary data containing a plurality of addressable first data

elements" is shown in '004 col. 8, lines 19-25;

"(B) providing secondary data containing a plurality of second data elements; and

(C) for each second data element:" is disclosed in '004 col. 8, lines 26-28;

"(C1) searching for a first data element which matches content of the second data element, and" is taught in '004 col. 8 lines 36-38 (i.e. "searching" same as "convolution operation");

"(C2) generating a key element including the address of the matching first data element when a match is found for the content of the second data element" is shown in '004 col. 8, lines 15-27 (i.e. "saved along with information matching them ... in a bit addressable manner").

As to dependent claim 2, "wherein the first and second data elements are represented by integer values and wherein step (C) further includes:" is disclosed in '004 col. 8, lines 26-29;

"when a match is not found for the content of a second data element; (C3) producing an adjusted second data element by incrementing or decrementing the integer value of the second data element" is taught in col. 12, lines 25-32;

"(C4) searching for a first data element which matches the integer value of the adjusted second data element, and" is shown in '004 col. 8, lines 36-38;

"(C5) generating a key element including the address of the matching first data element when a match is found for the adjusted second data element" is disclosed in '004 col. 8, lines 15-27;

"and replacing the content of the matching first data element with the integer value of the second data element prior to producing the adjusted second data element" is taught in '004 col. 8, lines 33-42.

As to dependent claim 3, "wherein step (C) further includes: when a match is not found for 'the content of the adjusted second data element; (C6) . producing a new adjusted second data element by incrementing or decrementing the adjusted second data element and repeating steps (C4) and (C5) for the new adjusted second data element" is taught in '004 col. 9, lines 59-62.

As to dependent claim 4, "wherein, prior to step (C) the method includes: determining a range for the contents of the first data elements, determining a range for the contents of the second data elements" is taught in '004 col. 8, lines 1-9;

"comparing the range for the first data elements with the range for the second data elements" is shown in '004 col. 8, lines 45-57;

"shifting the contents of the second data elements when the range for the second data elements falls outside of the range for the first data elements, such that the range for the second data elements falls substantially within the range for the first data elements, and using the shifted second data elements as the second data elements in step (C)" is shown in '004 col. 8, lines 57-63.

As to dependent claim 6, "wherein the step of determining a range for the contents of the second data elements includes: establishing as a reference a minimum value which can be attributed to the range of possible second data elements" is disclosed in '004 col. 8, lines 19-25.

As to dependent claim 7, "wherein the step of comparing includes calculating an offset value by subtracting the reference value from the lower limit" is taught in '004 col. 8, lines 29-33.

As to dependent claim 8, "wherein the step of shifting includes adding the offset value to the contents of each second data element" is shown in '004 col. 8, lines 33-42.

As to dependent claim 9 and 10, "further including storing the key elements" and "further including storing the offset value with the key elements" is disclosed in '004 col. 8 lines 15-33.

As to dependent claim 11, "wherein: step (A) includes providing a digital representation of the content of each first data element, step (B) includes providing a digital representation of the content of each second data element, and step (C1) includes comparing values of the digital representations of the first and second data elements" is taught in '004 col. 1, lines 5-20.

As to dependent claim 12, "wherein the secondary data includes a text message and each second data element" is shown in '004 col. 4, lines 3-6;

"includes an alphanumeric character" is disclosed in '004 col. 14, lines 12-14.

As to dependent claim 13, "wherein the text message includes one or more of the following:

a title,

an artist,

a copyright holder,

a body to which royalties should be paid, and general terms for publisher distribution" is taught in '004 col. 14, lines 14-22.

As to dependent claim 14, "further including storing the primary data or modified primary data produced by step (C5)" is shown in '004 col. 9, lines 29-30.

As to dependent claim 15, 16, and 17 "wherein the primary data includes first data elements arranged in a two-dimensional array wherein each first data element defines a characteristic associated with a still image element" and "wherein the first data elements are obtained from a stream of data representing a digitized still image" and "wherein the digitized still image is obtained from a still digital camera" is disclosed in '004 col. 4, lines 32-36.

As to dependent claim 18, "wherein the digitized still image is obtained from a computer game or other software" is taught in '004 col. 4, lines 61-63.

As to dependent claim 25, "wherein the primary data includes first data elements arranged in a one-dimensional array wherein each first data element defines a characteristic associated with a digital audio sample" is shown in '004 col. 6, lines 6-7.

As to dependent claim 26, and 27"wherein the digital audio samples are obtained from a stream of data representing digitized sound or music" and "wherein the digital audio samples are obtained from two streams of data representing two channels of digitized sound for stereo reproduction" is disclosed in '004 col. 6 lines 11-19.

As to dependent claim 32, "wherein the number of first data elements is greater than the number of second data elements" is taught in '004 col. 8, lines 29-31.

As to dependent claim 33, "wherein the address of each first data element is used only once for generating the key elements, whereby second data elements having equal

contents are matched to first data elements having different addresses" is shown in '004 col.

8 lines 33-42.

As to independent claim 34, this claim contains substantially similar subject matter as

independent claim 1, (i.e. claim 1 addresses encode claim 34 addresses decode) and is rejected

along the same rationale.

As to dependent claim 35 and 36, these claims contain substantially similar subject

matter as cited above in claims 7-12 and are rejected along the same rationale.

As to independent claim 37, this claim is directed to the apparatus of the method of

claim 1 and is similarly rejected along the same rationale.

As to dependent claim 38-40, these claims are directed to the apparatus of the method of

claim 2-4 and are similarly rejected along the same rationale.

As to independent claim 41, this claim is directed to the apparatus of the method of

claim 34 and is similarly rejected along the same rationale.

As to independent claim 42-45, these claims contain substantially similar as cited above

in as claims 1, 34, 37, and 41 and are rejected along the same rationale (i.e. cryptography same

as steganography).

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

7.   **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over '004, in further

view of Kobayashi et al. U.S. Patent No. 6,249,870 issued 19 June 2001 (hereinafter '870).

As to dependent claim 5, the following is not taught in '004 "**wherein the step of**

determining a range for the contents of the first data elements includes calculating a mean

and standard deviation for the first data elements; and determining a lower limit for the

first data elements based on the mean and standard deviation" however '870 teaches "" in

col. 7 lines 39-45 "values of the detection basic function are concentrated around their average

with the change range of value being small at nearby points necessary for changing the values of

detection basic function. More specifically, for the latter condition, when σ is assumed to be the

standard deviation of detection basic function".

It would have been obvious to one of ordinary skill in the art at the time of the invention

to further modify a steganographic method of protecting copy protection rights to include a

means to utilize statistical calculation taught in '870. One of ordinary skill in the art would have

been motivated to perform such a modification because the ability to establish the genuine owner

through statistical calculation is utilized in a data hiding method of '870 (see col. 1, lines 6 et

seq.) "The present invention relates to a data hiding method and a data extraction method to

embed owner or copyright information (message information) into media information such as

digital images ... controlling the embedding operation for the information with a statistical

examination".

8.   **Claims 19, 20, and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over

'004, in further view of Braudway et al. U.S. Patent No. 5,825,892 issued 20 October 1998

(hereinafter '892).

As to dependent claim 19, "**wherein each first data element defines a characteristic associated with a motion video element**" is taught in '004 col. 4, lines 45-49 "includes modification to handle MPEG compressed audio and video" the following is not taught in '004 "**wherein the primary data includes first data elements arranged in a three-dimensional array**" however '892 teaches "In one embodiment the fine alignment of the correlation reference plane relative to the marked image is performed by evaluating a three-dimensional array" in col. 14, lines 51-55.

It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify a steganographic method of protecting copy protection rights to include a means to utilize a three-dimensional array taught in '892. One of ordinary skill in the art would have been motivated to perform such a modification because a robust hiding method will offer more copy protection see '892 (col. 1, lines 11 et seq.) "It is a constant endeavor to find improved techniques of placing a visible or invisible identifying mark on an image".

As to dependent claim 20, "**wherein the first data elements are obtained from a stream of data representing digitized motion video**" is taught in '004 col. 28, lines 27-29 "wherein the sample stream is obtained from at least one digitized movie".

As to dependent claim 23, "**wherein the digitized video is obtained from a digitized movie contained within a computer game or other software**" is shown in '004 col. 4, lines 44-63.

9.   **Claims 21, 22, 24, and 28-31** are rejected under 35 U.S.C. 103(a) as being unpatentable

over '004, in further view of '892, and in further view of Van Wie et al. U.S. Patent No.

5,943,422 issued 24 August 1999 (hereinafter '422).

As to dependent claim 21, the following is not taught in the combination of '004 and

'892 **"wherein the digitized video is obtained from a Video Compact Disc player"** however

'422 teaches "The present inventions may be used with all sorts of different kinds of electronic

appliances 100 each of which may include a rights management component ... an example

media player 102 capable of playing Digital Versatile Disks (DVDs)" in col. 11 lines 15-67.

It would have been obvious to one of ordinary skill in the art at the time of the invention

to further modify a steganographic method of protecting copy protection rights to include

electronic appliances to utilize the steganographic media as shown in '422. One of ordinary skill

in the art would have been motivated to perform such a modification because "end to end" right

protection is needed see '422 (col. 2, lines 3-13) "Moreover, the "real world" is analog.

Everything digital must ultimately be turned into something analog if we are to experience it ...

Despite the pervasiveness of analog signals, exiting methods for managing rights and protecting

copyright in the analog realm are primitive or non-existintent".

As to dependent claim 22 and 30 "wherein the digitized video is obtained from a

Laser Disc player" is taught in '422 col. 11, lines 15-67 "an example media player 102 capable

of playing Digital Versatile Disks (DVDs)" (i.e. Laser Disc utilizes same type of player as

DVD).

As to dependent claim 24, "wherein the digitsed video is obtained from a Digital

Versatile Disc player" is shown in '422 col. 11, lines 15-67 "an example media player 102

capable of playing Digital Versatile Disks (DVDs)".

As to dependent claim 28 and 31, "wherein the digitized sound or music is obtained

from a Compact Disc player" and "wherein the digitized sound or music is obtained from a

Video Compact Disc player" is disclosed in '422 col. 11,

lines 15-67 "an example media player 102 capable of playing Digital Versatile Disks (DVDs)"

(i.e. Compact Disc utilizes same type of player as DVD).

As to dependent claim 29, "wherein the digitized sound or music is obtained from a

Digital Audio Tape player" " is taught in '422 col. 11, lines 15-67 "video tape 120 may store

video and audio signals in analog form".

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as

set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to

expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed

within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened

statutory period will expire on the date the advisory action is mailed, and any extension fee

pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In

no event, however, will the statutory period for reply expire later than SIX MONTHS from the

mailing date of this final action.

10.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Ellen C Tran whose telephone number is

(571) 272-3842. The examiner can normally be reached from 6:30 am to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor,

Gregory A Morse can be reached on (571) 272-3838. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application

Information Retrieval (PAIR) system. Status information for published applications may be

obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

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Ellen Tran
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25 October 2004

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